wind energy projects being operated in Gujarat and expenditure incurred on them in given is Statement 'A' (*See* below).

(c) to (e) The performance of all the projects is by and large satisfactory, except for occasional forced outages.

Statement

Details of Wind Power Projects in Gujarat

S. No.	Name of project	Capacity (MW)	Total expenditure (Rs. in lakhs)
1	Mandvi District Kutch		
	(Phase I)	1.100 MW	180.00
	(Phase II)	0.500 MW	90.00
2	Okha, District Jamnagar		
	(Phase I)	0.550 MW	87.00
	(Phase II)	0.500 MW	90.00
3	Okha-Madhi, District Jamnagar		
	(Phase I)	1.800 MW	280.00
	(Phase II)	1.500 MW	260.00
4	Lamba, District Jamnagar	10.000 MW	2,400.00
5	Tuna District, Kutch		
	(Phase I)	0.090 MW	22.00
	(Phase II)	0.055 MW	20.00
	(Phase III)	0.550 MW	245.00
6	Veraval, District Junagarh		
	(Phase I)	0.040 MW	20.00
	(Phase II)	0.055 MW	22.00

Scheme for the Development of Non-Conventional Energy Sources

2053. SHRI DIGVIJAY SINGH :
SHRI MOHINDER SINGH LATHER :

Will the PRIME MINISTER be pleased to state :

(a) whether Government have formulated any scheme to develop the resources of non-conventional energy in order to meet the rising demand of energy ;

(b) if so, what are the details thereof stating the funds allocated for the purpose during the Eighth Five Year Plan ; and

(c) what is the existing percentage of the supply of energy through various non-conventional sources for industrial, agricultural and domestic consumption as against their demand ?

THE MINISTER OF STATE IN THE MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES AND MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE (SHRI S. KRISHNA KUMAR) : (a) and (b) Yes, Sir, Government have formulated a number of schemes/programmes for the development and utilisation of non-conventional energy systems and devices in order to meet/supplement the rising demand of energy physical targets and financial outlays for the 8th Five Year Plan are given at Statement 'A' (*See* below).

(c) Expected energy generation/savings from various non-conventional energy systems & devices installed upto 31-3-1993 is given Statement 'B' (*See* below). The percentage of power generated from non-conventional entrgy sources comes to about 0.24% of installed power generation capacity in the country. Similarly, it forms a small percentage in terms of other energy sources being used for industrial and domestic process heat applications.

Statement-I

Eighth Five Year Plan (1992—97) : *Financial & Physical*

Sl. No.	Programme	Approval Outlays (Rs in Crores)	Tentative Physical Targets	
1	Biogas Development Programme	320.00		
	a. Family Size Plants		7.50	lakh Nos
	b. CBP/IBP/NBP		450	Nos.
2	Improved Chulha Programme	80.00	100	lakhs Nos.
3	Solar Thermal Programme	80.00		
	a. Solar Thermal Energy System		2.75	lakh sq. m. Coll. Area
	b. Solar Cookers		3.00	lakh Nos.
4	Solar Photovoltaic Programme	90.00		
	a. SPV Lighting Systems		25,000	Nos.
	b. SPV Water Pumps		600	Nos.
	c. Other SPV Systems		1,720	KW
5	Wind Energy Programme	90.00		
	a. Wind Pumps		4,000	Nos.
	b. Wind Battery Charges		500	Nos.
	c. Wind Power		100	MW*
6	Urjagram (Surveys)	1.00		
7	Biomass Development Programme	15.00@		
8	Human and Animal Energy Programme	1.00		
9	Bioenergy Development Programme	20.00	300	MW*
10	Small Hydel Power Development Programme	100.00	200	MW*
11	Alternate Fuels for Surface Transpottation	10.00		
12	Magneto Hydro Dynamics	10.00		
13	Geo-thermal Energy			
14	Chemical Sources of Energy			
15	Ocean Energy			
16	Hydrogen Energy			
17	Indian Renewable Energy Development Agency Ltd.	10.00		
18	Regional Offices etc.	10.00		
19	Information & Publicity			
20	Seminars/Conferences			
21	International Coorperation			
22	World Bank/UNDP/AC			
23	Solar Energy Centre	15.00		
24	Special Area Programmes & Demonstration Activities	5.00		
	TOTAL	857.00		

@Includes Biomass Gasifiers;

*Includes Private Sector.

Statement-II

Expected Energy Generation/Savings from various Non-Conventional Energy Systems and Devices installed up to 31-3-1993

Sl. No.	Programmes	Unit	Systems Installed	Expected Energy Generation/ Fuel Savings Per Year	
1	Family Size Biogas Plants	Nos.	1,763,000	5,700,000	Tonnes of wood
2	Community/Institutional/Night Soil Biogas Plants	Nos.	1,009		
3	Improved Chulhas	Nos.	14,505,000	10,100,000	Tonnes of wood
4	Solar Thermal Systems	Area in Sq. mtr.	247,000	167,000,000	KWH
5	Solar Cookers	Nos.	288,000	173,000	Tonnes of wood
6	Solar Photovoltair	KW	3,324	5,000,000	KWH
7	Wind Power	KW	53,930	107,600,000	KWh
8	Wind Pumps	Nos.	3,009	3,851	Tonnes of Diesel
9	Biomass Gasifiers	KW	9,500	725	Tonnes of Diesel
10	Bio-energy/Cogeneration	KW	6,000	21,600,000	KWh
11	Small Hydro Power	KW	93,440	490,000,000	KWh

Bagasse as a Source of Energy

2054. SHRI KAMAL MORARKA : Will the PRIME MINISTER be pleased to state :

(a) whether it is a fact that India is the largest producer of sugarcane in the world ;

(b) whether it is a fact that Indian variety of sugarcane yields the maximum quantity of biomass in the form of Bagasse ;

(c) whether it is a fact that Bagasse is an environment friendly source of energy ;

(d) if so, what steps have been taken/ proposed to be taken to make best use of the vastly available potential of this source of energy ?

THE MINISTER OF STATE IN THE MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES AND MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE. (SHRI S. KRISHNA KUMAR) : (a) No Sir. As per world sugarcane production data available for 1992, India is the second largest producer of sugarcane after Brazil.

(b) No comparative study regarding yield of bagage from Indian varieties of sugarcane *viz-a-viz* the varieties of sugarcane available elsewhere in the world has been carried out.

(c) and (d) Yes, Sir. Ministry of Non-conventional Energy Sources had constituted a Task Force to assist in the formulation of a National Programme on Biomass based Cogeneration. The recommendations of the Task Force pertaining to bagasse based congeneration in sugar mills were discussed in a National Workshop held recently. A National Programme is likely to be launched after detailed examination of the recommendations.

Use of Solar Power

2055. SHRI TINDIVANAM G. VENKANTRAMAN : Will the PRIME MINISTER be pleased to state :

(a) whether Government propose to encourage solar power for lighting and industrial consumption ;

(b) if so, the States where the solar power is being tapped ;

(c) whether Government also encourage wind mills for production of electric energy; and